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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/623,975 | 09/11/2000 | Terje Fuglerud | 2000-1212A | 1872 |

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EXAMINER

NGUYEN, CAM N

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 02/20/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/623,975

Applicant(s)
Fuglerud et al.

Examiner
Cam Nguyen

Art Unit
1754



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Dec 3, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-20 is/are pending in the application.
- 4a) Of the above, claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION

1. Applicants' remarks and amendments, filed on 12/3/02, have been carefully considered.

Claims 1-2 have been canceled. New claims 3-20 have been added.

Claims 3-20 are now pending in this application.

2. Newly submitted claims 9-20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

In accordance with the restriction requirement under rule 35 U.S.C. 121, the claims are divided into 3 groups as follows:

- I. Claims 3-8, drawn to an ammonia synthesis catalyst, classified in class 502, subclass 328.
- II. Claims 9-14, drawn to a method of producing an ammonia synthesis catalyst, classified in class 502, subclass 104+.
- III. Claims 15-20, drawn to a process for the catalytic synthesis of ammonia using the catalyst, classified in class 423, subclass 352+.

The inventions are distinct, each from the other because:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be

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made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process as claimed can be used to make other and materially different product, such as refractory inorganic metal oxides, i.e., ceramics, alumina, silica, etc.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process of using that product, such as in the purification of automotive exhaust gases or in the hydrocarbon conversion processing.

Inventions II and III are related as process of making and process of using the product. The use as claimed cannot be practiced with a materially different product. Since the product is not allowable, restriction is proper between said method of making and method of using. The product claim will be examined along with the elected invention (MPEP § 806.05(I)).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-7 are rejected under 35 U.S.C. 103(a) as obvious over Senes et al., "hereinafter Senes", (U.S. Pat. 3,839,229) *in view of* Muenger et al., "hereinafter Muenger", (US Pat. 4,197,281).

Senes discloses an ammonia synthesis catalyst which constituted essentially, in the oxidized state, of magnetite Fe_3O_4 , with which are associated a plurality of promoters, i.e., at least three thereof, including the alumina (Al_2O_3), magnesia (MgO), lime (CaO), and potassium oxide (K_2O). The catalyst also contains cobalt, which can be in the form of oxide, and in the amount of between 5 and 10 percents, calculated as the cobalt metal. See col. 2, ln 42-65.

Regarding claims 3-5, Senes does not disclose titanium oxide. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated the titanium oxide into the catalyst of Senes in order to achieve an improved catalyst having promoted activity, because titanium dioxide is a known and useful promoter for the ammonia synthesis catalysts as evidenced by Muenger (see Muenger at col. 9, ln 55).

Regarding claim 6, Senes does not disclose the claimed cobalt amount. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have optimized the cobalt concentration in Senes in order to achieve an effective catalyst since the optimization of such cobalt amount involves only within routine experimentation of one having the ordinary skill in the art, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Regarding claim 7, Muenger does not disclose the titanium oxide concentration. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have predetermined the titanium oxide promoter amount sufficient for promoting the activity of the catalyst since such predetermination involves only within routine experimentation of one having the ordinary skill in the art, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

5. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not disclose or fairly suggest an ammonia synthesis catalyst containing the claimed metal oxides as specified in claim 3 and wherein the iron oxides having the atomic ratio of $\text{Fe}^{+2}/\text{Fe}^{+3}$ of between 0.5 to 0.65.

Response to Amendment/Arguments

6. Applicants' amendment/response filed on 12/3/02 has been considered, but deemed not persuasive in view of the new ground of rejections above.

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Conclusion

7. Claims 3-20 are pending. Claims 3-7 are rejected. Claim 8 is objected. Claims 9-20 are withdrawn due to nonelected (distinct) invention. No claims are allowed.

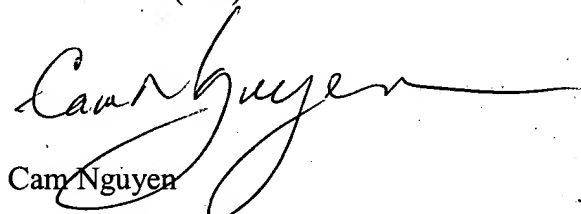
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The examiner can normally be reached on M-F from 8:30 am. to 6:00 pm, with alternative Monday off.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (before finals) and (703) 872-9311 (after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn

February 17, 2003


Cam Nguyen
Patent Examiner